

Steven Villanueva Jr. – Curriculum Vitae

David G. Price Instrumentation Fellow
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Personal Profile

United States Air Force Veteran, PhD candidate at The Ohio State University, National Science Foundation Graduate Research Fellow, and David G. Price Instrumentation Fellow. Interested in the discovery and characterization of exoplanets, primarily through ground-based transits, and instrumentation. Actively involved in outreach, the Society for the Advancement of Chicano/Hispanic and Native American Scientists (SACNAS), the National Society of Hispanic Physicists, and increasing diversity and minority participation in science.

Employment

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| 2017 - Present | David G. Price Instrumentation Fellow, The Ohio State University, Columbus, OH |
| 2014 - 2017 | NSF GRFP Fellow, The Ohio State University, Columbus, OH |
| 2012 - 2014 | Teaching Assistant, The Ohio State University, Columbus, OH |
| 2009 - 2012 | Undergraduate Research Assistant, Texas A&M University, College Station, TX |
| 2003 - 2007 | Aerospace Ground Equipment Mechanic, United States Air Force, RAF Lakenheath, UK |

Education

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| 2016 | M.S. in Astronomy, The Ohio State University |
| 2012 | B.S. in Physics, Texas A&M University |

Fellowships and Awards

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| 2017 | David G. Price Fellowship for Instrumentation |
| 2017 | Honorable Mention, Ford Foundation Graduate Dissertation Fellowship |
| 2016 | Outstanding Research Presentation, SACNAS Annual Conference |
| 2015 | Outstanding Research Presentation, SACNAS Annual Conference |
| 2014 | Outstanding Research Presentation, SACNAS Annual Conference |
| 2014 | National Science Foundation Graduate Research Fellowship |

Professional Activities

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| 2016 - Present | Member, American Astronomical Society |
| 2015 - 2017 | President, The Ohio State University SACNAS Chapter |
| 2014 - Present | Member, The Ohio State University SACNAS Chapter |
| 2012 - Present | Member, National Society of Hispanic Physicists |
| 2010 - Present | Member, SPIE |

Relevant Skills

Programming IDL, Python, SuperMongo, ExoFast, AstroImageJ
Mechanical Four years as a support equipment mechanic including working with mechanical, electrical, pneumatic, and hydraulic systems.

Publications

First-Author Publications

5. "DEDicated MONitor of EXotransits and Transients (DEMONEXT): Commissioning and Year One Results from a Low-Cost Robotic Telescope for follow-up of Exoplanetary Transits and Transients," **Villanueva, S., Jr.**, Gaudi, B. S., Pogge, R. W., et al., *arXiv: Sep 2017*
4. "The Dedicated Monitor of Exotransits and Transient Events (DEMONEXT): a Low-Cost Robotic and Automated Telescope for Followup of Exoplanetary Transits and Other Transient Events," **Villanueva, S., Jr.**, Eastman, J. D., Gaudi, B. S., et al., SPIE, 9906E, 2LV, 2016
3. "The Dedicated Monitor of Exotransits (DEMONEX): Seven Transits of XO-4b," **Villanueva, S., Jr.**, Eastman, J. D., & Gaudi, B. S., ApJ, 820, 87V, 2016
2. "Optimal resolutions for optical and NIR spectroscopy," **Villanueva, S., Jr.**, DePoy, D. L., & Marshall, J. L., SPIE, 8446E, 2VV, 2012
1. "MooSci: a lunar scintillometer," **Villanueva, S., Jr.**, DePoy, D. L., Marshall, J., et al., SPIE, 7735E, 47V, 2010

Contributed Refereed Publications

8. "Gaia17biu/SN 2017egm in NGC 3191: the closest hydrogen-poor superluminous supernova to date is in a "normal", massive, metal-rich spiral galaxy," Bose, S., Dong, S., Pastorello, A., incl. **Villanueva, S., Jr.**, *submitted, arXiv:1708.00864*
7. "KELT-20b: A giant planet with a period of $P \sim 3.5$ days transiting the $V \sim 7.6$ early A star HD 185603," Lund, M. B., Rodriguez, J. E., Zhou, G., et al., incl. **Villanueva, S., Jr.**, *submitted, arXiv:1707.01518*
6. "The Ultraviolet Spectroscopic Evolution of the Low-Luminosity Tidal Disruption Event iPTF16fml," Brown, J. S., Kochanek, C. S., Holoiien, T. W.-S, et al., incl. **Villanueva, S., Jr.**, *submitted, arXiv:1704.02321*
5. "WASP-167b/KELT-13b: Joint discovery of a hot Jupiter transiting a rapidly-rotating F1V star," Temple, L. Y., Hellier, C., Albrow, M. D., et al., incl. **Villanueva, S., Jr.**, MNRAS, 471, 2743T, 2017
4. "Reverberation Mapping of Optical Emission Lines in Five Active Galaxies," Fausnaugh, M. M., Grier, C. J., Bentz, M. C., et al., incl. **Villanueva, S., Jr.**, ApJ, 840, 97F, 2017
3. "Space Telescope and Optical Reverberation Mapping Project. V. Optical Spectroscopic Campaign and Emission-line Analysis for NGC 5548," Pei, L., Fausnaugh, M. M., Barth, A. J., et al., incl. **Villanueva, S., Jr.**, ApJ, 837, 131P, 2017
2. "Characterizing Optical Turbulence at the GMT Site with MooSci and MASS-DIMM," Thomas-Osip, J. E., Prieto, G., Berdja, A., et al., incl. **Villanueva, S., Jr.**, PASP, 124, 84T, 2012

1. "The Carnegie Supernova Project: Second Photometry Data Release of Low-redshift Type Ia Supernovae," Stritzinger, M. D., Phillips, M. M., Boldt, L. N., et al., incl. **Villanueva, S., Jr.**, AJ, 142, 156S, 2011

Contributed Non-Refereed Publications

4. "VIRUS instrument collimator assembly," Marshall, J. L., DePoy, D. L., Prochaska, T., et al., incl. **Villanueva, S., Jr.**, SPIE, 9147E, 3SM, 2014

3. "DECAL: A Spectrophotometric Calibration System For DECam," Marshall, J. L., Rheault, J., P., DePoy, D. L., et al., incl. **Villanueva, S., Jr.**, Conference Proc. *Calibration and Standardization of Large Surveys and Missions in Astronomy and Astrophysics*, arXiv:1302.5720, 2013

2. "GMACS: a wide field, multi-object, moderate-resolution, optical spectrograph for the Giant Magellan Telescope," DePoy, D. L., Allen, R., Barkhouser, R., et al., incl. **Villanueva, S., Jr.**, SPIE, 8446E, 1ND, 2012

1. "Development of VIRUS alignment and assembly fixtures," Collins, A. D., Vattiat, B., Marshall, J. L., et al., incl. **Villanueva, S., Jr.**, SPIE, 7735E, 74C, 2010

Presentations

Invited Talks

2017 Exoplanet Tea, MIT, Cambridge, MA
2017 Exoplanet Lunch, Harvard CfA, Cambridge, MA
2017 Stars and Planets Seminar, Harvard CfA, Cambridge, MA
2016 Journal Club, JPL, Pasadena, CA
2016 Journal Club, UCLA, Los Angeles, CA
2016 Journal Club, Vanderbilt, Nashville, TN

Contributed Talks

2017 AAS 229, Grapevine, TX
2016 SACNAS Annual Conference, Long Beach, CA
2016 KELT Workshop, Vanderbilt, Nashville, TN
2015 SACNAS Annual Conference, Washington, DC
2014 SACNAS Annual Conference, Los Angeles, CA

Contributed Posters

2016 SPIE, Edinburgh, UK
2016 Emerging Researches in Exoplanet Science (ERES), Penn State, State College, PA
2012 SPIE, Amsterdam, NL
2012 AAS 219, Austin, TX
2010 SPIE, San Diego, CA

Observational Experience

2015 8 nights, LBT 2 x 8.4-m, AZ
2014 8 nights, MDM, 1.3-m, AZ
2014 7 nights, LBT 2 x 8.4-m, AZ
2013 3 nights, MDM, 2.4-m, AZ

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| 2013 | 3 nights, LBT 2 x 8.4-m, AZ |
| 2013 | 8 nights, MDM 2.4-m, AZ |
| 2013 | 7 nights, LBT 2 x 8.4-m, AZ |

Outreach

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| 2017 | Latino Early Arrival Program |
| 2017 | NSF GRFP Panel |
| 2016 | Latino Early Arrival Program |
| 2016 | College of Arts and Sciences Promotional Video |
| 2016 | NSF GRFP Panel |
| 2016 | Columbus Area Middle School Lab Trip |
| 2015 | Breakfast of Science Champions |
| 2015 | Upper Arlington Library Star Party |
| 2015 | NSF GRFP Panel |
| 2015 | Upper Arlington Library Star Party |
| 2014 | Breakfast of Science Champions |
| 2014 | Private Roof Night and Planetarium Show |
| 2014 | OSU Partial Solar Eclipse Event |
| 2014 | OSU Planetarium Show for LASER/SACNAS/LSAMP (minority student organizations) |
| 2014 | OSU Star Party |
| 2014 | Astronomy on Tap |
| 2013 | OSU Planetarium Show |
| 2013 | Private Roof Night and Planetarium Show |
| 2013 | OSU Planetarium Star Party |
| 2013 | Astronomy on Tap Talk |
| 2013 | OSU Global Star Party |
| 2013 | OSU Roof Night Star Party |
| 2013 | Upper Arlington Elementary School Talk |
| 2012 | OSU Ground Night Star Party |